

Part number Description Title 1 25142-14 MakerSlide MakerSlideX CNC Milled or 8492K674 Attaches spindle nose to Z axis maker slide B01F86IKXO DC Spindle 24vdc preferred Nema 23 Stepper Motor Nema 23 Stepper Motor GT3 Timing Pulley 20 Tooth 9mm 3GT (GT2-3M) Timing Pulley - 20 Tooth - 9mm Belt - 8mm Clamp Bore Belt 8mm Clamp Bore Nut Block for 8mm Metric Acme Lead Screw 8mm Acme Nut Block Nema 17 Stepper Motor Nema 17 Stepper Motor Carbon Steel This part attaches the Nema 17 Z drive stepper to the Z makerslide. It also holds the end of the drag chain. There is a lot going on with this part, be sure to mount the Z Drive Mount 17 stepper motor first or you'll end up swearing you didn't read this note earlier. 3GT (GT2-3M) 9mm Timing Belt - Closed Loop Stepper Spacer Spaces roller stepper motor away from side plate to clear belt drive 3D Printed 3GT (GT2-3M) Timing Pulley - 20 Tooth - .250" Bore - 9mm Belt GT3 Timing Pulley 20 Tooth | Aluminum - 1060 | OpenBuilds Purchased Holds X drive stepper motor in place onto side plate 3D Printed PLA 40x20 Extrusion | Chop Saw Cut | Aluminum 26047-02 | 20 x 20 Extrusion | Flanged Ball Bearing 688ZZ Flanged Bearing 8x16x5mm 1/4" x 8mm Flexible Coupling Purchased Hardened Alloy Steel OpenBuilds 8mm Metric Acme Lead Screw 8mm Lead Screw This bracket receives an M8 bolt and nut that holds in place the idler pulley guiding the X-axis belt. Considering that no other M8 fasteners are used in the machine I Idler Bracket Mirror may redesign this part for a M5 bolt and nut. Smooth Idler Pulley Wheel |Purchased | Acetal (Delrin) LRS-350-24 24VDC Single Output Switching Power Supply, can be used for stepper motors and 24VDC spindles 24VDCPowerSupply SE-450-48 Select if you are using a 600 watt or above dc spindle, try using a 24vdc spindle if you are only cutting foam. 48VDCPowerSupply Purchased RollerEndCap 3D Printed Drive shafts for rollers, timing pulleys mount on these shafts. you can use 5/16 in. x 36 in. steel rod, but the aluminum shafts from mcmaster are much easier to cut to 8mm Shaft Long 1-1/4 in. Aluminum Rigid Conduit Lower Roller | Aluminum - 6061 | Home Depot | Drive shafts for rollers, timing pulleys mount on these shafts. you can use 5/16 in. x 36 in. steel rod, but the aluminum shafts from mcmaster are much easier to cut to 8mm Shaft Mid size with wood working power tools. Allows upper pressure rollers to drop into u shaped cradle holding your sheet to cut in place. Roller Cradle 3D Printed 93475A270 18-8 Stainless Steel Washer for M8 Screw Size, 8.4 mm ID, 16 mm OD Drive shafts for rollers, timing pulleys mount on these shafts. you can use 5/16 in. x 36 in. steel rod, but the aluminum shafts from mcmaster are much easier to cut to 8mm Shaft Short size with wood working power tools. #669669 1-1/4 in. Aluminum Rigid Conduit |Purchased | Aluminum - 6061 | Home Depot | Drives X axis, thread back side of belt through the x makerslide. 3GT (GT2-3M) Timing Belt Clamp XBelt Holds belt ends in place on back of x carriage plate Largest cover on machine, covers roller stepper motor and drive system. Add LED's inside if you want cool two way mirror effect. You may need to split this part in two if Cover Left Lower you don't have a 3D printer big enough to print this part. 24VDC power supply mounts into this cover, by mounting the power supply to the back of the maker slide this cover in turn holds the electronic enclosure suspended between the 48V cover. 48VDC power supply mounts into this cover, by mounting the power supply to the back of the maker slide this cover in turn holds the electronic enclosure suspended Cover 48V between the 24V cover. If not 48VDC power supply is used we can use help designing a 3D Printed plug / mount that takes the place of the 48VDC powe supply This plate holds all the electronics, it's a terrible design and all 3 plates should be 3D Printed as one large 2 part frame that milled or laser cut plates slide into. That Back Plane Electronics would be so much better. Even cooler would be a hinged setup that opens to allow easy access and work on the electronics. Bottom Plate Electronics See back plane description Thin acrylic sheet that receives the low cost two way mirror vinyl applique. If you add LEDs inside the enclosure you can surprise your professor when the machine turns Laser Cut or Electronics Window on! Thanks Neil for having a sense of humor! Holds acrylic window in place onto lower cover Frame Left Window This holds our cool 2 way mirror, but it could use an improved design Front Frame Electronics Supports and holds the tail end of 52mm spindles to the Z makerslide preventing tilting of the spindle during heavy cuts. Top Plate Electronics See Back Plane description Keeps large objects and finders from entering shocky parts of machine, but lets air out! Spring Loaded Tee Nut Slides into makerslide and extrusions so you can mount power supplies and other parts using M5 screws. Joining Strip Plate 3 Hole 3 Hole Joining Strip Plate JR-101-1F Un-Filtered IEC Power Entry Module, IEC C14, 6.3 A, 250 VAC, 1-Pole Fuse Holder IEC Power Entry Module USB 2.0 B Female Panel Mount to 90 Degree USB B Male 0.5m length. https://smile.amazon.com/gp/product/B071P2BGK5/ or USB - Type B - Female - Panel 3071P2BGK5 https://www.aliexpress.com/item/32764330008.html 5 pcs L Bracket Double Purchased Keeps crap from entering the side enclosure. Easy to remove so you can get at the set screws on the drive pulley attached to the Y stepper motor. 3D Printed zip tie mount makerslide mount this part to an extrusion slot and then use a zip tie to hold wires in palce! 3D Printed PLA PRASA1-16F- Rocker Switch, On-Off, SPST, Panel Mount, Black, PRA Series SWITCH ROCKER SPST 16A 125V 2410SB-05W-DC Axial Fan, 24 V, Square, 60 mm, 25 mm, Ball Bearing, 19.8 CFM Socket button head screw 92095A292 | Socket button head screw M8x1.25 x 35 Stainless Steel 18-8 Socket button head screw M5x0.8 | 92095A292 | Socket button head screw M5x0.8 x 8 Stainless Steel 18-8 Black Oxide Socket button head screw M5x0.8 | 92095A21 | Socket button head screw M5x0.8 Socket button head screw M5x0.8 | 92095A212 | Socket button head screw M5x0.8 x 16 Stainless Steel 18-8 Socket button head screw M5x0.8 94500A299 Socket button head screw M5x0.8 x 25 Stainless Steel 18-8

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS		NAME	DATE					
ANGULAR = ± °	DRAWN	MTek	04/16/2022					
SURFACE FINISH	CHECKED			TITLE	Foam Crawler Core CNC Roller Machine			
	APPROVED							
DO NOT SCALE DRAWING				Giant Squid Technologies				
BREAK ALL SHARP EDGES AND REMOVE BURRS				SIZE DWG NO.				DEV
THIRD ANGLE PROJECTION	MATERIAL	FINISH		SIZE	DWG NO.	01		REV
				SCALE ,	1:2		SHEET 1 of	1

Stainless Steel 18-8

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Stainless Steel

Purchased

Purchased

Purchased

Purchased

McMaster

McMaster

McMaster

Carr McMaster

McMaster

McMaster

Socket button head screw M5x0.8 | 97654A

91292A126 Hex socket head cap screw M5x0.80 x 16 Stainless Steel

93625A100 Hex nut style 1 grade A & B M3x0.5 Stainless Steel

Socket button head screw M4x0.7 | 92095A190 | Socket button head screw M4x0.7 x 10 Stainless Steel 18-8

Socket button head screw M3x0.5 | 92095A182 | Socket button head screw M3x0.5 x 10 Stainless Steel 18-8

Hex nut grade A & B M8x1.25 93625A300 Hex nut grade A & B M8x1.25 Stainless Steel

Hex nut grade A & B M5x0.8 93625A200 Hex nut grade A & B M5x0.8 Stainless Steel

Plain washer large grade A M5 91116A140 Plain washer large grade A M5 Stainless Steel

Plain washer normal grade A M5 | 98689A114 | Plain washer normal grade A M5 Stainless Steel

/ 92095A189 | Socket button head screw M4x0.7 x 8 Stainless Steel 18-8 Black Oxide

92125A128 Hex socket countersunk head screw M3x0.5 x 8 Stainless Steel Black Oxide

92125A130 Hex socket countersunk head screw M3x0.5 x 10 Stainless Steel Black Oxide

Hex socket head cap screw

Hex socket head cap screw

Hex socket countersunk head

Hex socket countersunk head

Hex nut style 1 grade A & B

screw M3x0.5 x 8

screw M3x0.5 x 10